

Questions and Answers from Modeling Photovoltaic Systems in SAM 2020.2.29, August 5, 2020

For a link to a recording of the webinar and other supporting materials, see <https://sam.nrel.gov/photovoltaic/pv-videos>.

If you generate to a private network which has zero export to the distributed network provider, can you use active power management to prevent export?

SAM currently assumes that there is always a grid available to accept extra power. You can set the financial model to assign no value to this power, but we hope to add the ability to temporarily disconnect from the grid in a future release.

In Module>>Temperature correction part, it only allow to select one specific array....when SAM will allow the user to specify a combination of flat and pitched roof top?

The temperature correction is the same for the same type of roof mount, whether the roof is flat or pitched. So unless your system is using different mounting hardware on the same roof, one selection should cover your system.

Is confusing to set shading, I just add a fixed number. Will be great to practice one.

We have some example scripts and scenes to use the shading tool in SAM github open source code repository at (<https://github.com/NREL/SAM/tree/develop/samples/3D%20Shade%20LK%20Scripts>)[test] and <https://github.com/NREL/SAM/tree/develop/samples/3D%20Shade%20Scene%20Files>

Hi, if I don't find the particular module I want to use, how do I enter the values required?

There is an option on the Module page called CEC Performance Model with User Entered Specifications on the top left above the module selection window. Selecting this option allows you to enter the module specifications needed to calculate the parameters needed to find the coefficients for your desired module

What do we do if the module or inverter we want to use is not included in SAM's database?

There is an option to enter your own module or inverter specs on both the module and inverter pages- Paul touched on this briefly in the webinar, so if you go back and watch the recording you should be able to see how he does that.

what is the right format for entering lat lon? I tried recently and it was not accepted

SAM should be able to accept lat/lon inputs on the resource page as: 35, -115 or 35 -115. Not all areas of the globe are covered, so you might see an error message if you're attempting to get data for an uncovered area. If you're finding that it doesn't work for an area covered by the NSRDB (the map that Paul showed), please post more details (including the error message you're seeing) on the SAM support forum and we can help troubleshoot further!

How to activate the "Solar Resource File Converter"?

Run a simulation in SAM and then click the Macros in the lower left corner and follow the instructions on the macro page to convert. Post any questions on the sam support forum at <https://sam.nrel.gov/forum.html>

Where can I find the "Solar Resource File Converter"?

Macros button in the lower left hand corner after running a simulation.

What is the maximum size of PV systems that can be modeled within SAM in terms of the following: a) MW system capacity, b) number of modeled inverters, c) number of PV modules, and d) number and capacity of Batteries.

There is no maximum size in SAM for a system. This is because SAM does not model each module or inverter specifically, so we don't run out of simulation room.

Does the existing system sizing Macro design battery sizing?

The system sizing macro does not currently treat battery sizing, however, in our latest release, the PV+Battery model does allow you to get optimized system sizing on the Battery page. That will be covered in an upcoming webinar.

I have simulated a case study with SAM 2020.2.29 where I set the grid interconnection limit to zero. However, the results showed that there is a transfer of power between the system and the grid, could you explain why?

Please post your question and SAM project file at <https://sam.nrel.gov/forum.html>

How much production increase do bi-facial models typically add?

This depends pretty heavily on your system configuration, but I will ask Paul to quickly show where to set up bifacial modules.

How do you calculate the annual energy loss?

The separate losses are specified on the losses page. The POA losses are calculated in the irradiation model in SAM and the module losses are calculated by the module model selected. The inverter losses are calculated by the inverter model. Wiring losses are specified on the losses page. Paul can show the other losses specified during the Q and A session.

I'm interested in soiling losses and cleaning by rainfall and manual. SAM assumes monthly soiling losses. Is there any way to treat cleaning events?, There is not currently a model to model rainfall cleaning events.

Would you tell me about sky diffuse model and weather irradiance data?

Is there any difference between Perez and isotropic?

There are some explanations of what each of these models are in the Help topic associated with that page. If you have further questions after reading those, feel free to post a question on the SAM support forum!